

# SEAL FOR COAXIAL CABLE IN DOWN-HOLE TOOLS

## Abstract

A seal for a coaxial cable electrical connector more specifically an internal seal for a coaxial cable connector placed within a coaxial cable and its constituent components. A coaxial cable connector is in electrical communication with an inductive transformer and a coaxial cable. The connector is in electrical communication with the outer housing of the inductive transformer. A generally coaxial center conductor, a portion of which could be the coil in the inductive transformer, passes through the connector, is electrically insulated from the connector, and is in electrical communication with the conductive core of the coaxial cable. The electrically insulating material also doubles as a seal to safeguard against penetration of fluid, thus protecting against shorting out of the electrical connection. The seal is a multi-component seal, which is pre-compressed to a desired pressure rating. The coaxial cable and inductive transformer are disposed within downhole tools to transmit electrical signals between downhole tools within a drill string. The internal coaxial cable connector and its atten-

dant seal can be used in a plurality of downhole tools, such as sections of pipe in a drill string, drill collars, heavy weight drill pipe, and jars.